

Math 1 - Unit 9 Review

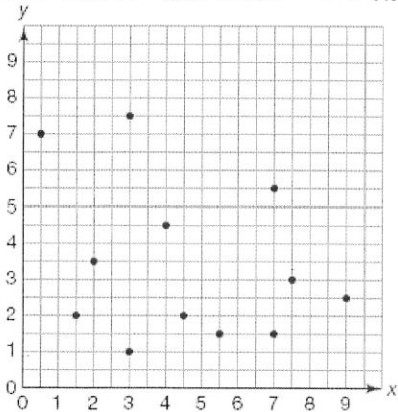
1. The table shows the number of subscribers to a small newspaper over a six-year period.

Year	2006	2007	2008	2009	2010	2011
Subscribers (Thousands)	1.4	1.5	1.8	2.4	2.8	3.4

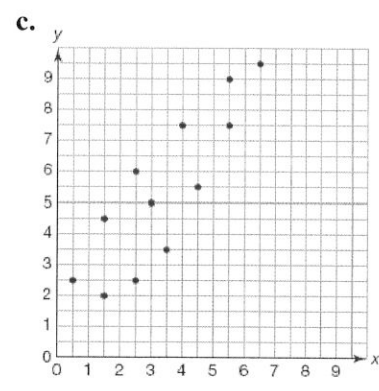
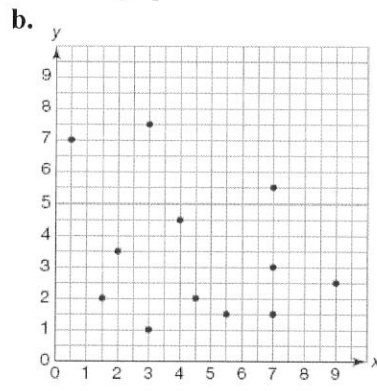
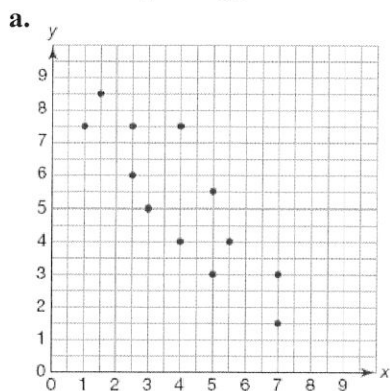
- Let x = the number of years since 2006. **Sketch and label** a graph of the ordered pairs. Then **determine/calculate** the least squares regression equation.
- Interpret** the equation in terms of the problem situation. (slope and y-intercept)
- Determine** then **interpret** the correlation coefficient of the data set.
- Predict** the number of subscribers in the year 2020. copy the equation and show your substitution.
- Is the least squares regression equation a good indicator of what the subscription numbers will be in the future based on your scatterplot and correlation? Explain.

2. Which correlation coefficient is most accurate for this data set?

$r = -0.3$ $r = -0.9$ $r = 0.3$ $r = 0.9$



3. Identify the type of correlation for each graph.

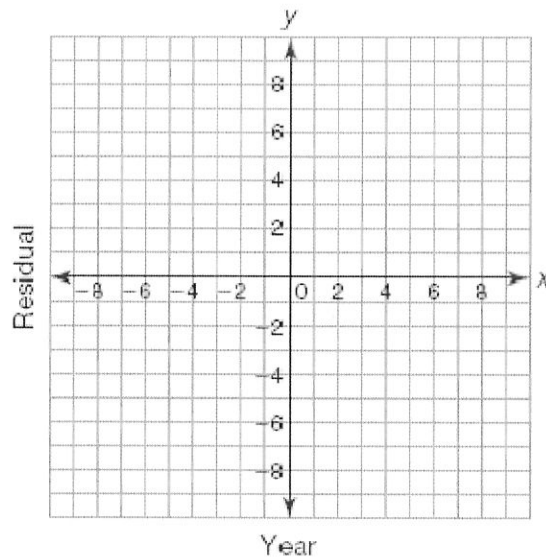


4. The number of students in a school chorus has increased since the school first opened 6 years ago. The linear regression equation describing the change is $y = 13.7x + 17.0$, where x represents the year and y represents the number of students.

- a. Complete the table to determine the residuals for the number of students.

Year	Number of Students	Predicted Number of Students	Residual Value
0	22		
1	26		
2	40		
3	59		
4	78		
5	83		

- b. Construct a residual plot of the data “by-hand” or using the graphing calculator- your choice



- c. Do you think a linear model is a good fit for the data based on the residual graph? Explain your reasoning.
5. An investigation reveals that people who reduced the amount of fat in their diets had lower blood pressure compared to those who ate a higher-fat diet. List two or more confounding variables that could have had an effect on this claim.
6. A commercial shows data that indicates when you take a certain type of cold medicine, your cold goes away within a week. Therefore, the medicine causes the cold to go away. List two or more common responses that could also cause this result.